


VIP Extension

Release Notes

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1	INTRODUCTION	8
1.1	Purpose of this document.....	8
1.2	Scope.....	8
1.3	References.....	8
1.4	Glossary.....	8
2	VIP VERSION VERSUS CONTROLLER VERSION	9
3	RELEASE 3.4.0.....	11
3.1	Release and version handling	11
3.2	Version designation.....	11
3.3	Compatibility.....	11
3.4	New features and extensions	12
3.4.1	PEC2 support	12
3.5	Bug fixes or corrections.....	12
3.6	Known Software and documentation problems.....	12
4	RELEASE 3.3.0.....	13
4.1	Release and version handling	13
4.2	Version designation.....	13
4.3	Compatibility.....	13
4.4	New features and extensions	14
4.4.1	PEC3 support	14
4.4.2	Carel-IPC.....	14
4.4.3	Reconnection handling	14
4.5	Bug fixes or corrections.....	14
4.5.1	Controller crash in SV5.1	14
4.5.2	Socket read	14
4.5.3	Large parameter data space.....	14
4.6	Known Software and documentation problems.....	14
5	RELEASE 3.2.0.....	16
5.1	Release and version handling	16
5.2	Version designation.....	16
5.3	Compatibility.....	16
5.4	New features and extensions	16
5.5	Bug fixes or corrections.....	16
5.6	Known Software and documentation problems.....	17
6	RELEASE 3.1.1.....	18
6.1	Release and version handling	18
6.2	Version designation.....	18
6.3	Compatibility.....	18
6.4	New features and extensions	18
6.5	Bug fixes or corrections.....	19
6.5.1	Version 2.6.0 of rmcEthernetLib removed.....	19
6.6	Known Software and documentation problems.....	19
7	RELEASE 3.1.0.....	21
7.1	Release and version handling	21
7.2	Version designation.....	21
7.3	Compatibility.....	21
7.4	New features and extensions	21
7.5	Bug fixes or corrections.....	22
7.5.1	Valid multicast group range for “AC 800M – Multicast” channel	22
7.5.2	Boolean variables with AC 450 protocols.....	22

7.5.3	Improved VIP command 14	22
7.5.4	Improved cyber security robustness.....	22
7.5.5	Increased “queue lock” time-out time	22
7.6	Known Software and documentation problems.....	22
8	RELEASE 3.0.2.....	24
8.1	Release and version handling	24
8.2	Version designation.....	24
8.3	Compatibility.....	24
8.4	New features and extensions	24
8.5	Bug fixes or corrections.....	24
8.6	Known Software and documentation problems.....	25
9	RELEASE 3.0.1.....	26
9.1	Release and version handling	26
9.2	Version designation.....	26
9.3	Compatibility.....	26
9.4	New features and extensions	26
9.5	Bug fixes or corrections.....	26
9.5.1	CI861 configuration for PM891 controller is corrected.....	26
9.5.2	Old CI861 firmware.....	27
9.5.2.1	Race condition at reconnection is corrected	27
9.5.2.2	Corrections for building CI861 for SoftConttoller	27
9.5.2.3	Correction in diagnostic function for external diagnostic tools.....	27
9.6	Known Software and documentation problems.....	27
10	RELEASE 3.0.0.....	29
10.1	Release and version handling	29
10.2	Version designation.....	29
10.3	Compatibility.....	29
10.4	New features and extensions	29
10.5	Bug fixes or corrections.....	29
10.5.1	Race condition at reconnection is corrected.....	29
10.5.2	Corrections for building CI861 for SoftConttoller	29
10.5.3	Correction in diagnostic function for external diagnostic tools.....	30
10.6	Known Software and documentation problems.....	30
11	RELEASE 2.12.0.....	31
11.1	Release and version handling	31
11.2	Version designation.....	31
11.3	Compatibility.....	31
11.4	New features and extensions	31
11.5	Removed features.....	31
11.6	Bug fixes or corrections.....	31
11.6.1	Valid multicast group range for “AC 800M – Multicast” channel	31
11.6.2	Boolean variables with AC 450 protocols.....	32
11.6.3	Improved VIP command 14	32
11.6.4	Improved cyber security robustness.....	32
11.6.5	Increased “queue lock” time-out time.....	32
11.6.5.1	Race condition at reconnection is corrected	32
11.6.5.2	Corrections for building CI861 for SoftConttoller	32
11.6.5.3	Correction in diagnostic function for external diagnostic tools.....	32
11.7	Known Software and documentation problems.....	32
12	RELEASE 2.11.0.....	34
12.1	Release and version handling	34

12.2	Version designation.....	34
12.3	Compatibility.....	34
12.4	New features and extensions	34
12.5	Bug fixes or corrections.....	34
12.6	Known Software and documentation problems.....	34
13	RELEASE 2.10.2.....	36
13.1	Release and version handling	36
13.2	Version designation.....	36
13.3	Compatibility.....	36
13.4	New features and extensions	36
13.5	Bug fixes or corrections.....	36
13.5.1	Memory leak.....	36
13.5.2	Configuration of gateway route fails.....	36
13.6	Known Software and documentation problems.....	37
14	RELEASE 2.10.1.....	38
14.1	Release and version handling	38
14.2	Version designation.....	38
14.3	Compatibility.....	38
14.4	New features and extensions	38
14.5	Bug fixes or corrections.....	38
14.5.1	Reading of CI861VIPHwLib generates warnings	38
14.5.2	Lack of communication buffers at protocol errors.....	38
14.5.3	Configuration failure at hot insertion.....	39
14.6	Known Software and documentation problems.....	39
15	RELEASE 2.10.0.....	40
15.1	Release and version handling	40
15.2	Version designation.....	40
15.3	Compatibility.....	40
15.4	New features and extensions	40
15.4.1	Added support for U-Gauge device.....	40
15.5	Bug fixes or corrections.....	40
15.5.1	Receiving of string with the HPC protocol	40
15.6	Known Software and documentation problems.....	41
16	RELEASE 2.9.0.....	42
16.1	Release and version handling	42
16.2	Version designation.....	42
16.3	Compatibility.....	42
16.4	New features and extensions	42
16.4.1	Added support for system version 5.0 SP1 and 5.0 SP2.....	42
16.5	Bug fixes or corrections.....	42
16.5.1	Host swap does not work in SV5.0 SP1	42
16.5.2	Re-insertion of communication channel	43
16.5.3	Protocol error when using little endian byte order for AC 450 protocol format.....	43
16.6	Known Software and documentation problems.....	43
17	RELEASE 2.8.0.....	44
17.1	Release and version handling	44
17.2	Version designation.....	44
17.3	Compatibility.....	44
17.4	New features and extensions	44
17.4.1	Added support for protocol AC450 VIP2	44
17.5	Bug fixes or corrections.....	44
17.6	Known Software and documentation problems.....	44

18	RELEASE 2.7.1	46
18.1	Release and version handling	46
18.2	Version designation	46
18.3	Compatibility	46
18.4	New features and extensions	46
18.5	Bug fixes or corrections	46
18.5.1	Improved diagnostics	46
18.5.2	Corrected sending of large UDP telegrams	47
18.5.3	Improved TCP throughput for large telegrams	47
18.5.4	Corrected handling of the Valid parameter	47
18.5.5	Corrected handling of broadcast addresses	47
18.6	Known Software and documentation problems	47
19	RELEASE 2.7.0	48
19.1	Release and version handling	48
19.2	Version designation	48
19.3	Compatibility	48
19.4	New features and extensions	48
19.4.1	Added support for protocol AC800 VIP2	48
19.5	Bug fixes or corrections	48
19.5.1	Corrected handling for large messages	48
19.6	Known Software and documentation problems	49
20	RELEASE 2.6.1	50
20.1	Release and version handling	50
20.2	Version designation	50
20.3	Compatibility	50
20.4	Bug fixes or corrections	50
20.4.1	CI861 firmware	50
20.4.1.1	Faulty conversion of 2-byte integer values	50
20.4.1.2	Faulty byte swapping of 2-byte values	50
20.5	Known Software and documentation problems	50
21	RELEASE 2.6.0	52
21.1	Release and version handling	52
21.2	Version designation	52
21.3	Compatibility	52
21.4	New features and extensions	52
21.4.1	Watchdog telegram support	52
21.4.2	Support for little endian (Intel byte order)	52
21.4.3	Support for TTL (Time To Live) setting	52
21.5	Bug fixes or corrections	53
21.5.1	CI861 firmware	53
21.5.1.1	Memory leak in CI861	53
21.5.2	Protocol handler for Controller	53
21.5.2.1	Duplicated message identity indication at application download	53
21.5.2.2	Controller crash when channel position is changed	53
21.5.3	Protocol handler for Control Builder	53
21.5.3.1	Multicast does not work for second Ethernet port.	53
21.6	Known Software and documentation problems	53
22	RELEASE 2.5.2	55
22.1	Release and version handling	55
22.2	Version designation	55
22.3	New features and extensions	55
22.4	Bug fixes or corrections	55
22.4.1	CI861 firmware	55

22.4.1.1	CI861 partly hanging at multiple TCP connections to the same peer and port.....	55
22.5	Known Software and documentation problems.....	55
23	RELEASE 2.5.1	56
23.1	Release and version handling	56
23.2	Version designation.....	56
23.3	New features and extensions	56
23.4	Bug fixes or corrections.....	56
23.4.1	CI861 firmware	56
23.4.1.1	CI861 hanging with “full send queue” indication on rmcEthernetSend blocks.....	56
23.5	Known Software and documentation problems.....	56
24	RELEASE 2.5.0.....	57
24.1	Release and version handling	57
24.2	Version designation.....	57
24.3	New features and extensions	57
24.4	Bug fixes or corrections.....	57
24.4.1	CI861 firmware	57
24.4.1.1	Problem when using same port number for several AC 800M – Unicast channels	57
24.4.1.2	Communication stop when using the AC450 VIP protocol.....	57
24.4.2	Hardware definition files.....	57
24.4.2.1	Problem when using several AC 800M – Multicast channels	57
24.4.3	Protocol handler for Control Builder	58
24.4.3.1	Problem when using several AC 800M – Multicast channels.....	58
24.4.3.2	Control Builder 4.1.0/1 fails to open projects that include AC 800M – Broadcast channels.....	58
24.4.4	Protocol handler for Controller	58
24.4.4.1	Problem with corrupted receive data for large messages.....	58
24.5	Known Software and documentation problems.....	58
25	RELEASE 2.4.0.....	59
25.1	Release and version handling	59
25.2	Version designation.....	59
25.3	New features and extensions	59
25.4	Bug fixes or corrections.....	59
25.4.1	Protocol handler for Control Builder	59
25.4.1.1	Control Builder 4.1.0/1 fails to open projects that includes a CI861 unit	59
25.5	Known Software and documentation problems.....	59
26	RELEASE 2.3.0.....	60
26.1	Release and version handling	60
26.2	Version designation.....	60
26.3	New features and extensions	60
26.4	Bug fixes or corrections.....	60
26.4.1	Protocol handler for Controller	60
26.4.1.1	Telegram status that originates from CI861 is not shown on function blocks.....	60
26.5	Known Software and documentation problems.....	60
27	SOFTWARE INSTALLATION	61
27.1	Communication Interface CI861	61

27.2	System Version 5.0 for AC 800M	61
27.2.1	From VIP version 2.10	61
27.2.1.1	800xA environment.....	61
27.2.1.2	Compact CB environment.....	61
27.2.2	VIP versions older than 2.10.....	62
27.2.2.1	800xA environment.....	62
27.2.2.2	Compact CB environment.....	62
27.3	System Version 5.0 for PEC.....	63
27.3.1	From VIP version 2.11	63
27.3.1.1	800xA environment.....	63
27.3.1.2	Compact CB environment.....	63
27.3.2	VIP versions older than 2.11	63
27.3.3	800xA environment.....	63
27.3.4	Compact CB environment.....	63
27.4	System Version 4.1 for AC 800M	64
27.4.1	800xA environment.....	64
27.4.2	Compact CB environment.....	65
27.5	System Version 4.1 for PEC.....	66
27.5.1	800xA environment.....	66
27.5.2	Compact CB environment.....	66
27.6	Control IT Version 3.2 (Baseline 2).....	66
27.7	Addendum for PEC version 4.1.2	67
27.7.1	Compact CB environment.....	67
27.7.2	800xA environment.....	67
27.8	Addendum for PEC version 4.1.3	68
27.8.1	Compact CB environment.....	68
27.8.2	800xA environment.....	68
27.9	Addendum for PEC version 4.1.4	68

1 INTRODUCTION

1.1 Purpose of this document

This document represents the release notes for this product and versions. The document provides a brief overview on functionality. It lists the problems that existed in the previous version that were fixed and corrected in this release. It also enumerates known problems encountered in the final testing of this release. Where possible the document identifies workarounds that help overcome the problem.

1.2 Scope

The VIP function is used to establish TCP/UDP/IP based communication using the VIP protocol. Communication module CI861 is used as interface in AC 800 controllers. The VIP function can be used for fast communication between AC 800 controllers and communication with other VIP enabled equipment, e.g. AC 450RMC controller, IBA logger, ARGUS logger, U-Gauge device, level 2 systems etc.

The VIP function can be used in following configurations:

- Single AC 800M controller configurations with PM860, PM864, PM866 and PM891 processor modules.
- AC 800PEC controllers PP D113, PP D512 and PP D513
- Non SIL applications.
- Non redundant CI861 module configurations

Refer chapter Compatibility for respective release to get more information regarding verified versions.

1.3 References

1.4 Glossary

CB	Control Builder
HPC	High Performance Communication
VIP	Vendor Internet Protocol

2 VIP VERSION VERSUS CONTROLLER VERSION

The table below lists all the VIP versions versus supported controller versions.

VIP version	PEC		AC 800M	
	SV4.1	SV5	SV4.1	SV5
2.5.0			4.1.0/0 4.1.0/4	
2.5.1	4.1.2 ¹⁾	5.0.0 5.0.0.1 5.0.0.2 5.0.0.3	4.1.0/0 4.1.0/4	5.0.0/0
2.5.2			4.1.0/0 4.1.0/4	
2.6.0			4.1.0/0 4.1.0/4	
2.6.1	4.1.3 ²⁾	5.0.1.0	4.1.0/0 4.1.0/4	5.0.0/0
2.7.0 (beta)				
2.7.1 (beta)				
2.8.0	4.1.4 ³⁾	5.0.0.4 5.0.1.1	4.1.0/0 4.1.0/4	5.0.0/0
2.9.0		5.0.2.0	4.1.0/0 4.1.0/4	5.0.0/0 5.0.1/2 5.0.2/0
2.10.0				5.0.1/2 5.0.2/0
2.10.1		5.0.2.2		5.0.2/2
2.10.2				5.0.1/2 5.0.2/2
2.11.0		5.0.3.2		5.0.2/4
2.12.0				5.0.2/*
3.0.0		5.0.3.2		5.1.0/0
3.0.1		5.0.3.2		5.1.0/0
3.0.2		5.0.3.2		5.0.2/4 5.1.0/0
3.1.0		5.0.3.3		5.0.2/* 5.1.0/0
3.1.1		5.0.3.3		5.0.2/* 5.1.0/0
3.2.0		5.0.3.3		5.0.2/* 5.1.0/0 5.1.1/1

VIP version	PEC		AC 800M	
	SV4.1	SV5	SV4.1	SV5
3.3.0		5.0.3.3 5.1.1.4		5.0.2/* 5.1.0/1 5.1.1/1
3.4.0		5.0.3.3 5.1.1.4		5.0.2/* 5.1.0/1 5.1.1/1

- 1) Some of the VIP files that are installed by the PEC 4.1.2 CB extension are old. Refer chapter 27.7 for installing of correct files.
- 2) Some of the VIP files that are installed by the PEC 4.1.3 CB extension are old. Refer chapter 27.8 for installing of correct files.
- 3) Reference to latest CI861 firmware file is faulty. Refer chapter 27.9 for workaround.

3 RELEASE 3.4.0

3.1 Release and version handling

Added support for PEC2 controller PP D113 in CI861VIPHwLib.

3.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5.1 (CI861VIPHwLib)	3.4.0	x
- CI861 firmware	3.0.0.0	
- Protocol handler, controller part	3.0.0.0	
- Protocol handler, CB part	3.0.0.0	
Hardware library for SV5.0 SP2 (CI861VIPHwLib)	2.5.0	
- CI861 firmware	3.0.0.0	
- Protocol handler, controller part	3.0.0.0	
- Protocol handler, CB part	3.0.0.0	
Hardware library for SV5 (CI861VIPPecHwLib, for PEC2 only)	1.3.0	x
- CI861 firmware	3.0.0.0	
- Protocol handler, controller part	3.0.0.0	
- Protocol handler, CB part	3.0.0.0	
Library rmcEthernetLib for SV5.1	3.0.0	

3.3 Compatibility

This VIP release is verified with hardware and software according to the tables below. Supported configurations are described in chapter 1.2.

Hardware Module	Firmware version
AC 800M with single PM864	5.1.1/1, 5.1.0/1
AC 800M with single PM891	5.1.1/1 and 5.1.0/1
AC 800PEC with PP D113	5.0.3.3 (based on 5.0.2/0)
AC 800PEC with PP D512	5.1.1.4 (based on 5.1.0/0)
AC 800PEC with PP D513	5.1.1.4 (based on 5.1.0/0)

Software Component	Version
Control Builder AC 800	5.1.1/1 and 5.1.0/1

3.4 New features and extensions

3.4.1 PEC2 support

Components for PEC2 is added in the CI861VIPHwLib version 3.4.0. Former library CI861VIPPecHwLib for PEC2 controller is also updated with latest components to maintain backward compatibility when updating existing project.

3.5 Bug fixes or corrections

-

3.6 Known Software and documentation problems

- Hot removal of the CI861 does not work in SV5.1 systems. Removal of the CI861 module may crash the controller when communication is active.
- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stops during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does no work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes

4 RELEASE 3.3.0

4.1 Release and version handling

Added support for PEC3 controller PPD 512 and PPD 512. New custom protocol "Carel-IPC" is added for Ruukki.

4.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5.1 (CI861VIPHwLib)	3.3.0	x
- CI861 firmware	3.0.0.0	x
- Protocol handler, controller part	3.0.0.0	x
- Protocol handler, CB part	3.0.0.0	x
Hardware library for SV5.0 SP2 (CI861VIPHwLib)	2.5.0	x
- CI861 firmware	3.0.0.0	x
- Protocol handler, controller part	3.0.0.0	x
- Protocol handler, CB part	3.0.0.0	x
Hardware library for SV5 (CI861VIPPecHwLib, for PEC2 only)	1.2.0	x
- CI861 firmware	3.0.0.0	x
- Protocol handler, controller part	3.0.0.0	x
- Protocol handler, CB part	3.0.0.0	x
Library rmcEthernetLib for SV5.1	3.0.0	

4.3 Compatibility

This VIP release is verified with hardware and software according to the tables below. Supported configurations are described in chapter 1.2.

Hardware Module	Firmware version
AC 800M with single PM864	5.1.1/1, 5.1.0/1
AC 800M with single PM891	5.1.1/1 and 5.1.0/1
AC 800PEC with PP D113	5.0.3.3 (based on 5.0.2/0)
AC 800PEC with PP D512	5.1.1.4 (based on 5.1.0/0)
AC 800PEC with PP D513	5.1.1.4 (based on 5.1.0/0)

Software Component	Version
Control Builder AC 800	5.1.1/1 and 5.1.0/1

4.4 New features and extensions

4.4.1 PEC3 support

Support is added for controller PP D512 and PP D513.

4.4.2 Carel-IPC

Added support for custom protocol "Carel-IPC" that is used by Ruukki.

4.4.3 Reconnection handling

A new connection request from a communication partner is now accepted even if there already is an existing connection. The existing connection (socket) is closed and the new one will be used instead. A connection request was immediately closed in earlier versions if an active connection to same IP address and port number already exists.

4.5 Bug fixes or corrections

4.5.1 Controller crash in SV5.1

The controller crashed when downloading a configuration that contains CI861 module(s) for PM860, PM861, PM864, PM866 and PM891 controllers. The problem was caused by usage faulty protocol handler template for compiling/linking.

4.5.2 Socket read

Reading of data from socket without consuming data is corrected to make it possible to read from socket even if not all bytes are available in socket yet.

4.5.3 Large parameter data space

Correction to allow hardware units with parameter data that makes use of more than one internal communication buffer. The correction is needed for configuration of "Carel-IPC" messages.

4.6 Known Software and documentation problems

- Hot removal of the CI861 does not work in SV5.1 systems. Removal of the CI861 module may crash the controller when communication is active.
- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.

- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes

5 RELEASE 3.2.0

5.1 Release and version handling

Release 3.2.0 supports version 5.1 Feature Pack 4.

5.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5.1 (CI861VIPHwLib)	3.2.0	
- CI861 firmware	2.10.0.0	
- Protocol handler, controller part	2.10.0.0	
- Protocol handler, CB part	2.9.0.0	
Hardware library for SV5.0 SP2 (CI861VIPHwLib)	2.4.0	
- CI861 firmware	2.10.0.0	
- Protocol handler, controller part	2.9.2.0	
- Protocol handler, CB part	2.8.0	
Hardware library for SV5 (CI861VIPPecHwLib)	1.1.0	
- CI861 firmware	2.10.0.0	
- Protocol handler, controller part	2.9.2.0	
- Protocol handler, CB part	2.9.0	
Library rmcEthernetLib for SV5.1	3.0.0	

5.3 Compatibility

This VIP release is verified with hardware and software according to the tables below. Supported configurations are described in chapter 1.2.

Hardware Module	Firmware version
AC 800M with single PM864	5.1.1/1, 5.1.0/0 and 5.0.2/4
AC 800M with single PM891	5.1.1/1 and 5.1.0/0
AC 800PEC with PPD113	5.0.3.3 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.0.2/4 and 5.1.0/0

5.4 New features and extensions

-

5.5 Bug fixes or corrections

-

5.6 Known Software and documentation problems

- Hot removal of the CI861 does not work in SV5.1 systems. Removal of the CI861 module may crash the controller when communication is active.
- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes

6 RELEASE 3.1.1

6.1 Release and version handling

Release 3.1.1 is a release with corrections.

6.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5.1 (CI861VIPHwLib)	3.1.0	
- CI861 firmware	2.10.0.0	
- Protocol handler, controller part	2.9.2.0	
- Protocol handler, CB part	2.9.0.0	
Hardware library for SV5.0 SP2 (CI861VIPHwLib)	2.4.0	
- CI861 firmware	2.10.0.0	
- Protocol handler, controller part	2.9.2.0	
- Protocol handler, CB part	2.8.0	
Hardware library for SV5 (CI861VIPPecHwLib)	1.1.0	
- CI861 firmware	2.10.0.0	
- Protocol handler, controller part	2.9.2.0	
- Protocol handler, CB part	2.9.0	
Library rmcEthernetLib for SV5.0 SP2	2.6.0	removed
Library rmcEthernetLib for SV5.1	3.0.0	

6.3 Compatibility

This VIP release is verified with hardware and software according to the tables below. Supported configurations are described in chapter 1.2.

Hardware Module	Firmware version
AC 800M with single PM864	5.1.0/0 and 5.0.2/4
AC 800M with single PM891	5.1.0/0
AC 800PEC with PPD113	5.0.3.3 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.0.2/4 and 5.1.0/0

6.4 New features and extensions

-

6.5 Bug fixes or corrections

6.5.1 Version 2.6.0 of rmcEthernetLib removed

The 2.6.0 version overwrites the rmcEthernetLib 3.0.0 when upgrading a version 3.0.2 of the VIP extension package. The 2.6.0 version is therefore removed.

6.6 Known Software and documentation problems

- Hot removal of the CI861 does not work in SV5.1 systems. Removal of the CI861 module may crash the controller when communication is active.
- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes



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Page

20

7 RELEASE 3.1.0

7.1 Release and version handling

Release 3.1.0 is a release with corrections and some improvements.

7.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5.1 (CI861VIPHwLib)	3.1.0	x
- CI861 firmware	2.10.0.0	x
- Protocol handler, controller part	2.9.2.0	x
- Protocol handler, CB part	2.9.0.0	
Hardware library for SV5.0 SP2 (CI861VIPHwLib)	2.4.0	x
- CI861 firmware	2.10.0.0	x
- Protocol handler, controller part	2.9.2.0	x
- Protocol handler, CB part	2.8.0	
Hardware library for SV5 (CI861VIPPecHwLib)	1.1.0	x
- CI861 firmware	2.10.0.0	x
- Protocol handler, controller part	2.9.2.0	x
- Protocol handler, CB part	2.9.0	x
Library rmcEthernetLib for SV5.0 SP2	2.6.0	
Library rmcEthernetLib for SV5.1	3.0.0	

7.3 Compatibility

This VIP release is verified with hardware and software according to the tables below. Supported configurations are described in chapter 1.2.

Hardware Module	Firmware version
AC 800M with single PM864	5.1.0/0 and 5.0.2/4
AC 800M with single PM891	5.1.0/0
AC 800PEC with PPD113	5.0.3.3 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.0.2/4 and 5.1.0/0

7.4 New features and extensions

-

7.5 Bug fixes or corrections

7.5.1 Valid multicast group range for “AC 800M – Multicast” channel

The multicast group range is corrected in online help file CI861_HW.chm. Valid range is 239.1.1.1 to 239.1.176.255.

7.5.2 Boolean variables with AC 450 protocols

Correction for boolean variables with the *AC 450 VIP* and *AC 450 VIP2* protocols. The correction also applies to protocol Boolean values are not transferred and surrounding variable values are also corrupted in previous versions.

7.5.3 Improved VIP command 14

System variable *VipCmd* is used for printing of internal diagnostics. Command 14 writes queue locking diagnostics to the controller log and the CI module log.

7.5.4 Improved cyber security robustness

Telnet function and VxWorks debugging agent are disabled.

7.5.5 Increased “queue lock” time-out time

The “queue lock” time-out time is increased from 200 to 300 μ s. The old time was too short in some cases that caused dropped messages. This problem has been reported by some projects with PM866 controllers.

7.6 Known Software and documentation problems

- Hot removal of the CI861 does not work in SV5.1 systems. Removal of the CI861 module may crash the controller when communication is active.
- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The *rmcEthernetConnect* block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stops during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does no work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has

to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.

- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option “Copy unconnected channels” is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes

8 RELEASE 3.0.2

8.1 Release and version handling

Release 3.0.2 is a release with support for coexistence of 5.0.2 firmware for AC 800M controllers.

8.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5.1 (CI861VIPHwLib)	3.0.0	x
- CI861 firmware	2.9.3.0	
- Protocol handler, controller part	2.9.1	
- Protocol handler, CB part	2.9.0	
Hardware library for SV5.0 SP2 (CI861VIPHwLib)	2.2.2	
- CI861 firmware	2.9.2.0	
- Protocol handler, controller part	2.8.2	
- Protocol handler, CB part	2.8.0	
Hardware library for SV5 (CI861VIPPecHwLib)	1.0.2	
- CI861 firmware	2.9.3.0	
- Protocol handler, controller part	2.8.2	
- Protocol handler, CB part	2.8.0	
Library rmcEthernetLib	3.0.0	

8.3 Compatibility

This VIP release is verified with hardware and software according to the tables below. Supported configurations are described in chapter 1.2.

Hardware Module	Firmware version
AC 800M with single PM864	5.1.0/0 and 5.0.2/4
AC 800M with single PM891	5.1.0/0
AC 800PEC with PPD113	5.0.3/2 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.1.0/0

8.4 New features and extensions

-

8.5 Bug fixes or corrections

-

8.6 Known Software and documentation problems

- Hot removal of the CI861 does not work in SV5.1 systems. Removal of the CI861 module may crash the controller when communication is active.
- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

9 RELEASE 3.0.1

9.1 Release and version handling

Release 3.0.1 is a release with minor corrections.

9.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5 (CI861VIPHwLib)	2.3.1	x
Hardware library for SV5 (CI861VIPPecHwLib)	1.0.2	x
CI861 firmware	2.9.3.0	x
Protocol handler, controller part	2.9.1	x
Protocol handler, CB part	2.9.0	
Library rmcEthernetLib	3.0.0	
Hardware definition files	-	

9.3 Compatibility

This VIP release is verified with hardware and software according to the tables below. Supported configurations are described in chapter 1.2.

Hardware Module	Firmware version
AC 800M with single PM864	5.1.0/0
AC 800M with single PM891	5.1.0/0
AC 800PEC with PPD113	5.0.3/2 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.1.0/0

9.4 New features and extensions

Added support for SV5.1. VIP function also available for processor PM891.

9.5 Bug fixes or corrections

9.5.1 CI861 configuration for PM891 controller is corrected

Configuration of communication channels for the CI861 module may fail for PM891 controllers. Typically following error message is shown in the controller log when configuration fails:

```
CBufQueueMsg::ConvertQueueMsgStatus(0x401000e) = 0x4030007
```

9.5.2 Old CI861 firmware

Old version 2.9.2.0 of the CI861 firmware is included in the hardware library. The firmware is tagged as *FWCI861_20090814 2.9.3.0 (CI861VIPHwLib 2.3-0)* in the firmware upgrade dialog. After a download the version column shows version 2.9.2.0.

The problem applies both to the CI861VIPHwLib and the CI861VIPPecHwLib libraries.

Following bug fixes are related to firmware version 2.9.3.

9.5.2.1 Race condition at reconnection is corrected

A race condition problem arises if the client attempts to do a connection request immediately after a local disconnection in the server end.

9.5.2.2 Corrections for building CI861 for SoftConttoller

Corrections to make CI861 (SoftCEM) possible to build for SoftController usage.

9.5.2.3 Correction in diagnostic function for external diagnostic tools

Message spy command corrected. Message period time is corrected when the time stamp counter wraps around.

9.6 Known Software and documentation problems

- Hot removal of the CI861 does not work in SV5.1 systems. Removal of the CI861 module may crash the controller when communication is active.
- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The `rmcEthernetConnect` block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stops during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does no work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on `rmcEthernetRecv` block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP

and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.

- VIP Control Builder Protocol Handler crashes when option “Copy unconnected channels” is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

10 RELEASE 3.0.0

10.1 Release and version handling

Release 3.0.0 is a release with support for system version 5.1 and the PM891 processor module.

10.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5 (CI861VIPHwLib)	2.3.0	x
Hardware library for SV5 (CI861VIPPecHwLib)	1.0.1	x
CI861 firmware	2.9.3.0	x
Protocol handler, controller part	2.9.0	x
Protocol handler, CB part	2.9.0	x
Library rmcEthernetLib	3.0.0	x
Hardware definition files	-	

10.3 Compatibility

This VIP release is verified with hardware and software according to the tables below. Supported configurations are described in chapter 1.2.

Hardware Module	Firmware version
AC 800M with single PM864	5.1.0/0
AC 800M with single PM891	5.1.0/0
AC 800PEC with PPD113	5.0.3/2 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.1.0/0

10.4 New features and extensions

Added support for SV5.1. VIP function also available for processor PM891.

10.5 Bug fixes or corrections

10.5.1 Race condition at reconnection is corrected

A race condition problem arises if the client attempts to do a connection request immediately after a local disconnection in the server end.

10.5.2 Corrections for building CI861 for SoftConttoller

Corrections to make CI861 (SoftCEM) possible to build for SoftController usage.

10.5.3 Correction in diagnostic function for external diagnostic tools

Message spy command corrected. Message period time is corrected when the time stamp counter wraps around.

10.6 Known Software and documentation problems

- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

11 RELEASE 2.12.0

11.1 Release and version handling

Release 2.12.0 is a release with corrections and some improvements. Hardware library CI861VIPPecHwLib is removed in this version.

11.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5.0 SP2 (CI861VIPHwLib)	2.4.0	x
- CI861 firmware	2.10.0.0	x
- Protocol handler, controller part	2.9.2.0	x
- Protocol handler, CB part	2.8.0	
Hardware library for SV5 (CI861VIPPecHwLib)		deleted
Library rmcEthernetLib for SV5.0 SP2	2.6.0	

11.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	5.0.2/5

Software Component	Version
Control Builder AC 800	5.0.2/5

11.4 New features and extensions

11.5 Removed features

Hardware library CI861VIPPecHwLib is removed in this version. AC 800PEC controller is considered to be used with SV 5.1 800xA systems.

11.6 Bug fixes or corrections

11.6.1 Valid multicast group range for "AC 800M – Multicast" channel

The multicast group range is corrected in online help file CI861_HW.chm. Valid range is 239.1.1.1 to 239.1.176.255.

11.6.2 Boolean variables with AC 450 protocols

Correction for boolean variables with the *AC 450 VIP* and *AC 450 VIP2* protocols. The correction also applies to protocol Boolean values are not transferred and surrounding variable values are also corrupted in previous versions.

11.6.3 Improved VIP command 14

System variable *VipCmd* is used for printing of internal diagnostics. Command 14 writes queue locking diagnostics to the controller log and the CI module log.

11.6.4 Improved cyber security robustness

Telnet function and VxWorks debugging agent are disabled.

11.6.5 Increased “queue lock” time-out time

The “queue lock” time-out time is increased from 200 to 300 μ s. The old time was too short in some cases that caused dropped messages. This problem has been reported by some projects with PM866 controllers.

11.6.5.1 Race condition at reconnection is corrected

A race condition problem arises if the client attempts to do a connection request immediately after a local disconnection in the server end.

11.6.5.2 Corrections for building CI861 for SoftConttoller

Corrections to make CI861 (SoftCEM) possible to build for SoftController usage.

11.6.5.3 Correction in diagnostic function for external diagnostic tools

Message spy command corrected. Message period time is corrected when the time stamp counter wraps ar

11.7 Known Software and documentation problems

- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The *rmcEthernetConnect* block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stops during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does no work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.

- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

12 RELEASE 2.11.0

12.1 Release and version handling

Release 2.11.0 is a release that supports dynamic linking of the VIP function for AC 800PEC controllers.

12.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5 (CI861VIPHwLib)	2.2.2	
Hardware library for SV5 (CI861VIPPecHwLib)	1.0.0	new
CI861 firmware	2.9.2.0	
Protocol handler, controller part	2.8.2	
Protocol handler, CB part	2.8.0	
Library rmcEthernetLib	2.6.0	
Hardware definition files	-	

12.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	5.0.2/4
AC 800PEC with PPD113	5.0.3 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.0.2/4

12.4 New features and extensions

A new hardware library, CI861VIPPecHwLib, is added to the VIP function. This library is to be used from version 5.0.3 of the AC 800PEC firmware. The VIP function requires at least version 5.0.2/4 (Rev D) of the Control Builder when used in an AC 800PEC controller with 5.0.3 firmware.

12.5 Bug fixes or corrections

No corrections.

12.6 Known Software and documentation problems

- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.

- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

13 RELEASE 2.10.2

13.1 Release and version handling

Release 2.10.2 is a release with minor corrections.

13.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	2.2.2	x
CI861 firmware	2.9.2.0	x
Protocol handler, controller part	2.8.2	x
Protocol handler, CB part	2.8.0	
Library rmcEthernetLib	2.6.0	
Hardware definition files	-	

13.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	5.0.2/2, 5.0.1/2
AC 800PEC with PPD113	5.0.2 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.0.2/2

13.4 New features and extensions

-

13.5 Bug fixes or corrections

13.5.1 Memory leak

toggling the input parameter *En_C* on function block rmcEthernetConnect causes memory leakage. A small portion of memory is lost at each toggling.

13.5.2 Configuration of gateway route fails

Configuration of gateway route in CI861 fails when a gateway address is specified on the network interface level. The problem occurs at a power failure restart and when initializing the controller. The socket specific error code 65 is shown in the module log indicating that there is not route to the communication partner.

13.6 Known Software and documentation problems

- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stops during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does no work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

14 RELEASE 2.10.1

14.1 Release and version handling

Release 2.10.1 is a release with minor corrections.

14.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	2.2.1	x
CI861 firmware	2.9.1.0	x
Protocol handler, controller part	2.8.1	x
Protocol handler, CB part	2.8.0	
Library rmcEthernetLib	2.6.0	
Hardware definition files	-	

14.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	5.0.2/2
AC 800PEC with PPD113	5.0.2 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.0.2/2

14.4 New features and extensions

-

14.5 Bug fixes or corrections

14.5.1 Reading of CI861VIPHwLib generates warnings

Reading of the hardware definition files, included in the hardware library, generates warnings in the "session.log" file. The warnings occur due to additional checks that are added in SP2 during reading of hardware libraries.

14.5.2 Lack of communication buffers at protocol errors

Any protocol errors that occur when using "AC800 VIP" protocol with "little endian" byte order causes lack of communication buffers after a while. A typical protocol error is that a received telegram does not match the corresponding rmcEthernetRecv function block.

14.5.3 Configuration failure at hot insertion

Parts of the hardware configuration sometimes fail at a hot insertion of the CI861 module. The internal error code -7152 is shown in the controller log. The problem has been seen in large hardware configurations with many communication channels telegram types.

An internal error code, shown in the controller log, indicates time-out problem when entering a critical section (memory portion that is written both from CI861 and controller) in the CI861 memory. This problem occurs when the controller does not get access to the critical section within 200 μ s.

14.6 Known Software and documentation problems

- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The `rmcEthernetConnect` block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on `rmcEthernetRecv` block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

15 RELEASE 2.10.0

15.1 Release and version handling

Release 2.10.0 is a release with new features and minor corrections.

15.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	2.2.0	x
CI861 firmware	2.9.0.0	x
Protocol handler, controller part	2.8.0	
Protocol handler, CB part	2.8.0	
Library rmcEthernetLib	2.6.0	
Hardware definition files	-	

15.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	5.0.1/2 5.0.2/0
AC 800PEC with PPD113	5.0.2 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	5.0.1/3 5.0.2/0

15.4 New features and extensions

15.4.1 Added support for U-Gauge device

The U-gauge device that was supported in major version 1.0 of the VIP function is now also supported in version 2.0. Interfacing of input data from the device via telegram 21 is now done by means of an ordinary rmcEthernetRecv block instead of the special I/O block that was used in major version 1.0.

15.5 Bug fixes or corrections

15.5.1 Receiving of string with the HPC protocol

Receiving of strings did not work in earlier versions when using the HPC protocol, error code -6822 was indicated on the rmHpcRecv block.

15.6 Known Software and documentation problems

- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

16 RELEASE 2.9.0

16.1 Release and version handling

Release 2.9.0 is a release with new features.

16.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	2.1.0	x
CI861 firmware	2.8.1.0	x
Protocol handler, controller part	2.8.0	x
Protocol handler, CB part	2.8.0	x
Library rmcEthernetLib	2.6.0	x
Hardware definition files	-	

16.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	4.1.0/4 5.0.1/2 5.0.2/0
AC 800PEC with PPD113	5.0.2 (based on 5.0.2/0)

Software Component	Version
Control Builder AC 800	4.1.0/4 5.0.1/3 5.0.2/0

16.4 New features and extensions

16.4.1 Added support for system version 5.0 SP1 and 5.0 SP2

Service pack 1 and 2 is supported in this version. Using previous version with 5.0 SP1 did cause some problem. See section below.

16.5 Bug fixes or corrections

16.5.1 Host swap does not work in SV5.0 SP1

The controller crashes when the CI861 module is removed from its base plate in system version 5.0 SP1.

16.5.2 Re-insertion of communication channel

A channel that is removed from the HW tree and inserted again does not work after enabling.

16.5.3 Protocol error when using little endian byte order for AC 450 protocol format

Swapping of variable bytes for little endian byte order is not done correctly when bytes belonging to a certain variable are accommodated in two internal buffers. The problem might occur if the telegram exceeds 240 bytes and 2-byte integer variables or string variables are used.

16.6 Known Software and documentation problems

- Moving of a communication channel in the hardware tree might crash the controller in SV5.0 SP1 and SV5.0 SP2. The rmcEthernetConnect block should be disabled when downloading the moved channel to avoid the problem.
- If a reconnection is done from a TCP client during the reconfiguration of a TCP server channels in the CI861 module then the connection server may crash and the CI861 module has to be restarted to re-establish communication. To avoid the problem a delay of at least 1 second should be used in the TCP client when the connection is disconnected by the server end.
- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.
- VIP Control Builder Protocol Handler crashes when option "Copy unconnected channels" is selected. If the option 'Copy unconnected channels' is set to 'Inputs/Outputs' for a CI861 module (VIP), but not all channels in the 'Output Data' and 'Input Data' units are connected to program variables, the Control Builder crashes.

17 RELEASE 2.8.0

17.1 Release and version handling

Release 2.8.0 is a release with new features.

17.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	2.0.0	x
CI861 firmware	2.8.0.0	x
Protocol handler, controller part	2.7.1	
Protocol handler, CB part	2.7.0	
Library rmcEthernetLib	2.5.1	
Hardware definition files	-	x

17.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	4.1.0/4
AC 800PEC with PPD113	4.1.3 (based on 4.1.0/4)

Software Component	Version
PLC Control Builder AC 800PEC	4.1.3 (based on 4.1.0/4)

17.4 New features and extensions

17.4.1 Added support for protocol AC450 VIP2

Messages of this protocol use an 8-byte header. Both message identity and message length is 4-byte each. The lower two bytes of the MessageId parameter on the send and receive function block must be unique within a channel.

17.5 Bug fixes or corrections

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17.6 Known Software and documentation problems

- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.

- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.

18 RELEASE 2.7.1

18.1 Release and version handling

Release 2.7.1 is a release with bug fixes.

18.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	Not available	
CI861 firmware	2.7.1.0	x
Protocol handler, controller part	2.7.1	x
Protocol handler, CB part	2.7.0	x
Library rmcEthernetLib	2.5.1	x
Hardware definition files	-	

18.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	4.1.0/4
AC 800PEC with PPD113	4.1.3 (based on 4.1.0/4)

Software Component	Version
PLC Control Builder AC 800PEC	4.1.3 (based on 4.1.0/4)

18.4 New features and extensions

-

18.5 Bug fixes or corrections

18.5.1 Improved diagnostics

Socket error code is written to the CI861 module log for socket errors that is indicated with status code -7208 (unknown connection error).

Indication of too less data in a telegram (-6822) on the Status parameter of an rmcEthernetRecv block now remains until a valid telegram is received, not just one single execution cycle.

Indication of messages exceeding maximal length (16384 bytes) are sent or received is improved. Status code is -7307.

Status 'protocol conversion error' (-7306) is indicated if received message is too long for the 1131 variables. This check is only done for protocols that imply protocol conversion on the CI861 module such as AC450 VIP.

18.5.2 Corrected sending of large UDP telegrams

The limit for the socket send buffer is increased to be able to send messages up to 16834 bytes.

18.5.3 Improved TCP throughput for large telegrams

Socket buffers for sending and receiving is increased to 16834 bytes to increase throughput for large telegrams.

18.5.4 Corrected handling of the Valid parameter

The Valid parameter on rmcEthernetRecv is now reset when the Error parameter is set.

18.5.5 Corrected handling of broadcast addresses

Setting IP address for a General Computer channel to a broadcast address (255.255.255.255) gives compilation error.

18.6 Known Software and documentation problems

- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number. The CI861 module has to be restarted after a configuration change. Reconfiguration works if a dummy TCP server channel with the same port number is inserted in the hardware tree.
- The Status parameter on rmcEthernetRecv block does not indicate when a message with too much data is received. This problem applies to protocols that do not imply any protocol conversion on the CI861 module such as the AC800 VIP and AC800 VIP2 protocols. Extra data at the end of a received telegram is rejected.

19 RELEASE 2.7.0

19.1 Release and version handling

Release 2.7.0 is a release with new features and bug fixes.

19.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	Not available	
CI861 firmware	2.7.0.0	x
Protocol handler, controller part	2.7.0	x
Protocol handler, CB part	2.6.0	
Library rmcEthernetLib	2.5.0	
Hardware definition files	-	x

19.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	4.1.0/4
AC 800PEC with PPD113	4.1.3 (based on 4.1.0/4)

Software Component	Version
PLC Control Builder AC 800PEC	4.1.3 (based on 4.1.0/4)

19.4 New features and extensions

19.4.1 Added support for protocol AC800 VIP2

Messages of this protocol use an 8-byte header. Both message identity and message length is 4-byte each. The lower two bytes of the MessageId parameter on the send and receive function block must be unique within a channel.

19.5 Bug fixes or corrections

19.5.1 Corrected handling for large messages

Status code -7152 (Internal error) is shown on the send block if the message size exceeds 5 Kbyte. Corrections are done in CI861 firmware and in the protocol handler part for the controller to allow 16 Kbyte messages.

19.6 Known Software and documentation problems

- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number.

20 RELEASE 2.6.1

20.1 Release and version handling

Release 2.6.1 is a bug-fix release.

20.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	1.1.0	
CI861 firmware	2.6.1.0	x
Protocol handler, controller part	2.6.0	
Protocol handler, CB part	2.6.0	
Library rmcEthernetLib	2.5.0	
Hardware definition files	-	

20.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	4.1.0/4
AC 800PEC with PPD113	4.1.3 (based on 4.1.0/4)

Software Component	Version
PLC Control Builder AC 800PEC	4.1.3 (based on 4.1.0/4)

20.4 Bug fixes or corrections

20.4.1 CI861 firmware

20.4.1.1 Faulty conversion of 2-byte integer values

Function INT_TO_DINT gives faulty result for negative values for INT variables that are communicated via VIP if protocol AC450 VIP or HPC is used.

20.4.1.2 Faulty byte swapping of 2-byte values

Byte swapping of 2-byte values does not work when byte order *little-endian* is selected for a general computer channel with AC 450 VIP protocol. The first 2-byte value is correct but subsequent values are 0.

20.5 Known Software and documentation problems

- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.

- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does no work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.
- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number.

21 RELEASE 2.6.0

21.1 Release and version handling

Release 2.6.0 is a release with new features. The release also contains a bug fix that is required when using the VIP function in SV5 and SV4.1 versions from roll-up 3.

21.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	1.1.0	x
CI861 firmware	2.6.0.0	x
Protocol handler, controller part	2.6.0	x
Protocol handler, CB part	2.6.0	x
Library rmcEthernetLib	2.5.0	x
Hardware definition files	-	x

21.3 Compatibility

This VIP release is verified with hardware and software according to the tables below.

Hardware Module	Firmware version
AC 800M with PM864	4.1.0/4
AC 800PEC with PPD113	4.1.3 (based on 4.1.0/4)

Software Component	Version
PLC Control Builder AC 800PEC	4.1.3 (based on 4.1.0/4)

21.4 New features and extensions

21.4.1 Watchdog telegram support

Function blocks rmcEthernetWdSend and rmcEthernetWdRecv are added in the rmcEthernetLibrary. The blocks are used for sending/receiving of watchdog telegrams without any data part in the VIP telegrams, i.e. the VIP telegram does only contain the header.

21.4.2 Support for little endian (Intel byte order)

Parameter *Byte order* is available for *General Computer* channels. Other channel types use big endian as byte order. Setting byte order to little endian will reverse byte order for variable data as well as length and identity fields in the VIP message header.

21.4.3 Support for TTL (Time To Live) setting

Parameter *TTL* is available for *General Computer* channels. The TTL parameter is set to 8 for other channels types. The TTL parameter determines the total number of routers that can be passed. The TTL parameter was set to 1 in pervious versions.

21.5 Bug fixes or corrections

21.5.1 CI861 firmware

21.5.1.1 Memory leak in CI861

Some other internal memory objects are not released when a communication channel is removed from the hardware configuration tree.

Internal socket object is not released when last TCP server channel is removed from the hardware configuration for a specific port number.

21.5.2 Protocol handler for Controller

21.5.2.1 Duplicated message identity indication at application download

The communication stops after downloading of an application change. Status -7353 (Message identity is already used) is indicated on the send and receives blocks. Communication restarts after toggling of the En_C parameter the connect block. This problem has been reported for SV5.0 and SV4.1 roll-up 3.

21.5.2.2 Controller crash when channel position is changed

The controller might crash if the position of a communication channel is changed in the hardware configuration when another channel has active rmcEthernetSend blocks enabled.

21.5.3 Protocol handler for Control Builder

21.5.3.1 Multicast does not work for second Ethernet port.

Multicast channel doesn't work for the second Ethernet port if same socket port number is used as for first Ethernet port. The socket port number to use is implicitly defined by the last two numbers in the multicast address. E.g., multicast groups 239.16.4.1 and 239.17.4.1 give the same socket port number.

The protocol handler part in the CB is improved by generating compilation error if different multicast addresses results in same socket port.

Multicast group address for the *AC800M - Multicast* channel type is now also limited between 239.1.1.1 to 239.1.176.255.

21.6 Known Software and documentation problems

- Communication may stop during downloading of application changes in SB2 based systems and SV4.1 systems older than roll-up 3. Communication stops during 3-4 seconds have been measured in high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.
- Retransmitting of dropped TCP messages may take too long time when used for "real time" communication. Typically it might take up to 1 second before a dropped message is retransmitted.

- Reconfiguration of a TCP server channel in the hardware tree does not work if only one TCP server channel is used for a specific port number.

22 RELEASE 2.5.2

22.1 Release and version handling

Release 2.5.2 is a bug-fix release.

22.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	1.0.2	x
CI861 firmware	2.5.2.0	x
Protocol handler, controller part	2.5.0	
Protocol handler, CB part	2.5.0	
Library rmcEthernetLib	2.4.0	
Hardware definition files	-	

22.3 New features and extensions

-

22.4 Bug fixes or corrections

22.4.1 CI861 firmware

22.4.1.1 CI861 partly hanging at multiple TCP connections to the same peer and port

All communication stops after a while for an Ethernet port when a TCP client connects to a TCP server port that already is connected to another client with same IP address. The Ethernet port doesn't respond to ping requests after hanging.

Additional connection requests will now be immediately closed if a connection already exists. A warning message is printed to the module log.

22.5 Known Software and documentation problems

- Communication may stop during downloading of application changes. Communication stops during 3-4 seconds has been measured in a high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.

23 RELEASE 2.5.1

23.1 Release and version handling

Release 2.5.1 is a bug-fix release.

23.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	1.0.1	x
CI861 firmware	2.5.1.0	x
Protocol handler, controller part	2.5.0	
Protocol handler, CB part	2.5.0	
Library rmcEthernetLib	2.4.0	
Hardware definition files	-	

23.3 New features and extensions

-

23.4 Bug fixes or corrections

23.4.1 CI861 firmware

23.4.1.1 CI861 hanging with "full send queue" indication on rmcEthernetSend blocks

A receive thread in CI861 get stuck in a loop and overloads the CPU on the module if the length field in an incoming message header is 0. The send queues are filled up as the receiving takes priority over sending. Status code -7304 is indicated on all the rmcEthernetSend blocks.

23.5 Known Software and documentation problems

- Communication may stops during downloading of application changes. Communication stops during 3-4 seconds has been measured in a high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does no work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.

24 RELEASE 2.5.0

24.1 Release and version handling

Release 2.5.0 is a bug-fix release with some new features that now also can be used for RMC and PEC releases that are based on Control IT version 3.2, i.e. system baseline 2.

24.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
Hardware library for SV5	1.0.0	x
CI861 firmware	2.5.0.0	x
Protocol handler for controller part	2.5.0	x
Protocol handler for CB	2.5.0	x
Library rmcEthernetLib	2.4.0	x
Hardware definition files	-	x

24.3 New features and extensions

- New function blocks for HPC communication are added in the rmcEthernetLib library.
- Available for Control IT 3.2 based systems (baseline 2).

24.4 Bug fixes or corrections

24.4.1 CI861 firmware

24.4.1.1 Problem when using same port number for several *AC 800M – Unicast* channels

The configuration is only successful for the first *AC 800M – Unicast* channel. Configuration of remaining channels that use the same port number fails with a read icon in the tree.

24.4.1.2 Communication stop when using the *AC450 VIP* protocol

The communication stops after a while (122 messages) when the size of data to send is greater than 240 byte and the channel is configured for *AC450 VIP* protocol.

24.4.2 Hardware definition files

24.4.2.1 Problem when using several *AC 800M – Multicast* channels

The configuration is only successful for the first *AC 800M – Multicast* channel. Parameter error is written to the CI861 log for the remaining multicast channels. The traces in the log indicate that port number 20000 is used for all channels. Correction of this problem involves changes in the *ac800Multicast.hwd* file and the *CI861.dll* file.

24.4.3 Protocol handler for Control Builder

24.4.3.1 Problem when using several *AC 800M – Multicast* channels

The configuration is only successful for the first *AC 800M – Multicast* channel. Parameter error is written to the CI861 log for the remaining multicast channels. The traces indicate that port number 20000 is used for all channels. Correction of this problem involves changes in the *ac800Multicast.hwd* file and the *CI861.dll* file.

24.4.3.2 Control Builder 4.1.0/1 fails to open projects that include *AC 800M – Broadcast* channels

Max number of subunit is limited to 254 instead of 255 in the Control Builder shipped with SV4.1 roll-up 2. The control builder is terminated when trying to open a project that contains an *AC 800M – Broadcast* channel in the CI861 configuration. This implies that the position of I/O data blocks below a channel is limited to 254.

Note that this channel type will not be supported in future versions. This bug is corrected to be able to open a project with an existing broadcast channel. It's strongly recommended to replace the channel with an *AC 800M – Multicast* channel.

24.4.4 Protocol handler for Controller

24.4.4.1 Problem with corrupted receive data for large messages

Received data from byte-offset 1008 and further are corrupted if the AC800 VIP protocol variant is used. The corrupted data starts at byte-offset 240 if the AC450 VIP protocol is used.

Depending on internal buffer utilization in the CI861 module the corruption offset can start at 240 even for the AC800 VIP protocol if there is lack of 1024-byte buffers due to high message throughput or large receiving queues.

24.5 Known Software and documentation problems

- Communication may stop during downloading of application changes. Communication stops during 3-4 seconds has been measured in a high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.

25 RELEASE 2.4.0

25.1 Release and version handling

Release 2.4.0 is a bug-fix release with some new features that also is adapted for a beta of the SV5 system release.

25.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
CI861 firmware	2.3.0.0	x
Protocol handler for controller part	2.4.0	x
Protocol handler for CB	2.4.0	x
Library rmcEthernetLib	2.3.0	x
Hardware definition files	-	x

25.3 New features and extensions

-

25.4 Bug fixes or corrections

25.4.1 Protocol handler for Control Builder

25.4.1.1 Control Builder 4.1.0/1 fails to open projects that includes a CI861 unit

Max number of subunit is limited to 254 instead of 255 in the Control Builder shipped with SV4.1 roll-up 2. The control builder is terminated when trying to open a project that contains a CI861 configuration. This implies that the position of the channel below the Ethernet level, and the position of I/O data blocks below a channel, is limited to 254.

25.5 Known Software and documentation problems

- Communication may stop during downloading of application changes. Communication stops during 3-4 seconds has been measured in a high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does no work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.

26 RELEASE 2.3.0

26.1 Release and version handling

Release 2.3.0 is a bug-fix release with some new features.

26.2 Version designation

This VIP release contains the following SW components:

Software Component	Version	Changed
CI861 firmware	2.3.0.0	x
Protocol handler for controller part	2.3.0	x
Protocol handler for CB	2.3.0	x
Library rmcEthernetLib	2.3.0	x
Hardware definition files	-	x

26.3 New features and extensions

Support for HPC communication is added.

Added command (6) for system variable VipCmd for printing of I/O data block related diagnostic information to the controller log.

26.4 Bug fixes or corrections

26.4.1 Protocol handler for Controller

26.4.1.1 Telegram status that originates from CI861 is not shown on function blocks

Updating of telegram status corrected. Telegram related status that is generated by the CI861 is corrected for indication on the function blocks and updating of telegram diagnostics that is written to the controller log when setting system variable VipCmd to 4.

26.5 Known Software and documentation problems

- Communication may stop during downloading of application changes. Communication stops during 3-4 seconds has been measured in a high-loaded PM864 controllers.
- Upgrading of CI861 firmware fails after removal of the application. The controller must be reset to be able to upgrade CI861.
- Downgrading of CI861 firmware does not work in Control Builders version 3.2/x. Thus, downgrading of CI861 from version 2.x to 1.0 must be done with a SV4.1 based Control Builder.

27 SOFTWARE INSTALLATION

27.1 Communication Interface CI861

CI861 modules are only loaded with boot software at delivery. A module running the boot program is indicated by a twinkling red LED.

CI861 firmware has to be loaded via the firmware dialog in the Control Builder before downloading any configuration and application to the controller.

27.2 System Version 5.0 for AC 800M

27.2.1 From VIP version 2.10

27.2.1.1 800xA environment

- Uninstall any existing VIP system extension that should be replaced. Uninstall is done via the *Add or Remove Programs* utility that is reached via the *Control Panel*. The name of the installed component in the program list is *ABB VIP System extension <version>*.
- Extract the files in the VIP system extension archive to a temporary folder in the Aspect Server and start the installation by running the setup file.
- Load or update the VIP system extension by using the Configuration Wizard.
- Copy help file *rmcEthernetLib.chm* from folder *C:\Program Files\ABB Industrial IT\Aspect Express Aspects\VIP System Extension\help* to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.2.1.2 Compact CB environment

- Install the CI861VIPHwLib hardware library by extracting the library archive to folder *HWLibraries* in the CB installation directory.
- Install the rmcEthernetLib function block library by extracting the library archive to folder *Libraries* in the CB installation directory.
- Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.2.2 VIP versions older than 2.10

27.2.2.1 800xA environment

- Import the hardware library CI861VIPHwLib to the 800xA system via the import/export tool.
- Import the rmcEthernetLib library to the 800xA system via the import/export tool.
- Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.2.2.2 Compact CB environment

- Install the CI861VIPHwLib hardware library by extracting the library archive to folder *HWLibraries* in the CB installation directory.
- Install the rmcEthernetLib function block library by extracting the library archive to folder *Libraries* in the CB installation directory
- Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.3 System Version 5.0 for PEC

27.3.1 From VIP version 2.11

27.3.1.1 800xA environment

- Uninstall any existing VIP system extension that should be replaced. Uninstall is done via the *Add or Remove Programs* utility that is reached via the *Control Panel*. The name of the installed component in the program list is *ABB VIP System extension <version>*.
- Extract the files in the VIP system extension archive to a temporary folder in the Aspect Server and start the installation by running the setup file.
- Load or update the VIP system extension by using the Configuration Wizard.
- Copy help file *rmcEthernetLib.chm* from folder *C:\Program Files\ABB Industrial IT\Aspect Express Aspects\VIP System Extension\help* to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.3.1.2 Compact CB environment

- Install the CI861VIPPecHwLib hardware library by extracting the library archive to folder *HWLibraries* in the CB installation directory.
- Install the rmcEthernetLib function block library by extracting the library archive to folder *Libraries* in the CB installation directory.
- Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.3.2 VIP versions older than 2.11

27.3.3 800xA environment

The VIP function is a part of the AC 800PEC 800xA System Extension 5.0.

Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, from folder *AC800PEC_Extra* to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.3.4 Compact CB environment

The VIP function is a part of the AC 800PEC Control Builder M Extensions 5.0.

Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, from folder *AC800PEC_Extra* to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.4 System Version 4.1 for AC 800M

27.4.1 800xA environment

- Import hardware definition files into the project via the *Insert Hardware Definitions* dialog that is opened from the *File* menu in the Control Builder.
- Import the *rmcEthernetLib* library to the 800xA system via the import/export tool.
- Install CI861 firmware according to below.
 - Copy the CI861 firmware file to folder *Firmware/Bin* in the CB installation directory.
 - Add an entry in the *firmware.txt* file for the new CI861 firmware file according to the example below.

```
0x500D/PPC  FWCI861      2.7.0.0  2006-06-29
File=FWCI861_20007038.bin  Update=upCI857.bin
Zip=
```
 - Upgrade the firmware in CI861 modules via the firmware dialog.
- Install protocol handlers according to below.
 - Import *CI861.dll* and *CI861.bin* by means of the *FSD_Util* tool. Change the *HardwareTypeName* in the object name path to *CI861*. Click the *List Files* button to view installed files.
 - Remove any earlier version of the files before inserting the new one, mark the file and click *Delete* button.
 - Install the new file, click insert and navigate to the file.
 - The version and revision chosen in the *FSD_Util* must be version 0, revision 0 for the *CI861.dll* file and version 1, revision 0 for the *CI861.bin* file.
- Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.4.2 Compact CB environment

- Import hardware definition files into the project via the *Insert Hardware Definitions* dialog that is opened from the *File* menu in the Control Builder.
- Install the rmcEthernetLib function block library by extracting the library archive to folder *Libraries* in the CB installation directory.
- Install CI861 firmware according to below.
 - Copy the CI861 firmware file to folder *Firmware/Bin* in the CB installation directory.
 - Add an entry in the *firmware.txt* file for the new CI861 firmware file according to the example below.

```
0x500D/PPC   FWCI861       2.7.0.0   2006-06-29  
File=FWCI861_20007038.bin   Update=upCI857.bin  
Zip=
```

- Upgrade the firmware in CI861 modules via the firmware dialog.
- Install protocol handlers according to below.
 - Close the Control Builder if it is open.
 - Copy file CI861.dll and CI861.bin in the AC800PEC_Extra folder to the C:\ABB Industrial IT Data\Engineer IT Data\PLC Control Builder AC 800M 4.1\PHFiles\CI861 folder.
- Copy help files, rmcEthernetLib.chm, HW_CI861.chm and 3BSE014823R0001.PDF, to folder Help\UserHelp in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.5 System Version 4.1 for PEC

27.5.1 800xA environment


- Import hardware definition files into the project via the *Insert Hardware Definitions* dialog that is opened from the *File* menu in the Control Builder. The files are found below folder *AC800PEC_Extra* in the CB installation directory.
- Import the *rmcEthernetLib* library to the 800xA system via the import/export tool. The library is found below folder *AC800PEC_Extra* in the CB installation directory.
- Upgrade the firmware in CI861 modules via the firmware dialog.
- Install protocol handlers according to below.
 - Import *CI861.dll* by means of the *FSD_Util* tool. Change the *HardwareTypeName* in the object name path to *CI861*. Click the *List Files* button to view installed files.
 - Remove any earlier version of the files before inserting the new one, mark the file and click *Delete* button.
 - Install the new file, click insert and navigate to the file that is found below the *AC800PEC_Extra* folder.
 - The version and revision chosen in the *FSD_Util* must be version 0 and revision 0 for the *CI861.bin* file.
- Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, from folder *AC800PEC_Extra* to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.5.2 Compact CB environment

- Import hardware definition files into the project via the *Insert Hardware Definitions* dialog that is opened from the *File* menu in the Control Builder. The files are found below folder *AC800PEC_Extra* in the CB installation directory.
- Upgrade the firmware in CI861 modules via the firmware dialog.
- Install protocol handlers according to below.
 - Close the Control Builder if it is open.
 - Copy file *CI861.dll* in the *AC800PEC_Extra* folder to the *C:\ABB Industrial IT Data\Engineer IT Data\PLC Control Builder AC 800M 4.1\PHFiles\CI861* folder.
- Copy help files, *rmcEthernetLib.chm*, *HW_CI861.chm* and *3BSE014823R0001.PDF*, from folder *AC800PEC_Extra* to folder *Help\UserHelp* in the CB installation directory to enable context-sensitive help (F1 key) for VIP function blocks.

27.6 Control IT Version 3.2 (Baseline 2)




To be done

	ABB AB	Doc. no. 3BSE046133	Lang. en	Rev. ind. M	Page 66
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27.7 Addendum for PEC version 4.1.2

Some VIP related files that are shipped with PEC Control Builder extension version 4.1.2 is old and must be replaced according to below.

The dates of the files to be updated are shown in the figure below.

	rmcEthernetLib 2-4-0..>	22-Jun-2006 17:07	411k
	CI861.dll	28-Jun-2006 10:44	48k
	CI861.bin	28-Jun-2006 10:46	104k

27.7.1 Compact CB environment

- Correct version of CI861.dll is loaded from <http://10.41.246.123/ac800pec/CI861.dll>. Copy it to *AC800PEC_Extra\CI861\PHFile* directory in the CB installation directory and install the file according to chapter **Error! Reference source not found..**
- Correct version of CI861.bin is loaded from <http://10.41.246.123/ac800pec/CI861.bin>. Copy it to *AC800PEC_Extra\CI861\PHFile* directory in the CB installation directory and install the file according to chapter **Error! Reference source not found..**

27.7.2 800xA environment

- Correct version of CI861.dll is loaded from <http://10.41.246.123/ac800pec/CI861.dll>. Copy it to *AC800PEC_Extra\CI861\PHFile* directory in the CB installation directory and install the file according to chapter **Error! Reference source not found..**
- Correct version of CI861.bin is loaded from <http://10.41.246.123/ac800pec/CI861.bin>. Copy it to *AC800PEC_Extra\CI861\PHFile* directory in the CB installation directory and install the file according to chapter **Error! Reference source not found..**
- Correct version of rmcEthernetLib 2-4-0.afw is loaded from <http://10.41.246.123/ac800pec/rmcEthernetLib 2-4-0.afw>. *AC800PEC_Extra\800xA\afw* directory in the CB installation directory and install the file according to chapter **Error! Reference source not found..**

27.8 Addendum for PEC version 4.1.3

Some VIP related files that are shipped with PEC Control Builder extension version 4.1.3 is old and must be replaced according to below.

27.8.1 Compact CB environment

- Copy embedded file `Ci861.dll` to `AC800PEC_Extra\CI861\PHFile` directory in the CB installation directory and install the file according to chapter **Error! Reference source not found..**



- Copy embedded file `Ci861.bin` to `AC800PEC_Extra\CI861\PHFile` directory in the CB installation directory and install the file according to chapter **Error! Reference source not found..**

27.8.2 800xA environment

Copy the embedded object according to above and install the files according to chapter **Error! Reference source not found..**

27.9 Addendum for PEC version 4.1.4

The reference to the CI861 firmware file is faulty in the `firmware.txt` file that is found in folder `Firmware\Bin` in the CB installation directory. Replace the last line with following line:

```
0x500D/PPC750FX   FWCI861       2.8.0.0  2007-11-14
File=FWCI861_20071114.bin  Update=upCI857.bin  Zip=
```

REVISION

Rev. ind.	Page (P) Chapt. (C)	Description	Date Dept./Init.
-d1		Initial version	2006-06-30 VT/J Ruth
-d2		VIP version 2.5.2. Adapted for SV5.	2006-11-03
-d3		Added description for PEC version 4.1.2	2006-12-21
-d4		VIP version 2.6.0 Added description for CI861 in software installation. Added compatibility chapter.	2007-05-24
-d5		VIP version 2.6.1	2007-05-28
-d6		VIP version 2.7.0	2007-06-28
-d7		VIP version 2.7.1	2007-10-01
-d8		VIP version 2.8.0	2007-11-15
-d9		Version for hardware library in release 2.8.0 changed to 2.0.0	2007-12-06
-d10		Added table with versions for PEC. Added addendum for PEC version 4.1.3. Added addendum for PEC version 4.1.4.	2008-02-22 VT/J Ruth
-d11		VIP version 2.9.0	2008-09-01
-		Approved, first version	2008-09-04
A		VIP version 2.10.0	2009-01-26
B		VIP version 2.10.1	2009-04-29
C		Adapted for VIP version 2.10.2. Installation part improved.	2009-08-27
D		VIP version 2.11.0	2011-02-01
E		VIP version 3.0.0. "Scope" chapter added.	2011-03-15
F		VIP version 3.0.1	2011-06-29
G		VIP version 3.0.2. Version designation table improved.	2011-07-12
H		VIP version 3.1.0 and 2.12.0	2013-02-04
I		VIP version 3.1.1	2013-02-15
J		VIP version 3.2.0	2013-06-24
K		CI861VIPHwLib version corrected for VIP version 3.2.0	2013-09-17
L		VIP version 3.3.0. Scope updated for PEC.	2014-05-09
M		VIP version 3.4.0.	2014-06-24